

Remarks/Arguments

Reconsideration of the above-mentioned application is respectfully requested. As noted above the paragraph beginning at line 28 on page 12 and ending on line 1 of page 13 has been amended to correct the numeral for the g-sensing valve.

Claims 1-23 are presently in this application. Claims 1, 3-5, 8-12, 17, 22 and 23 were rejected in the Office Action as anticipated by the primary reference to Aldworth et al, U.S. Patent No. 5,199,426 ("Aldworth patent") or unpatentable over that reference in view of Jaggars, U.S. Patent No. 4,219,039. According to the Office Action the Aldworth patent teaches an apparatus for regulating the inhalation of breathable gas to and from a pilot's airway during excessive g-loads which function in the same manner of applicants' apparatus. It is respectfully submitted that the Examiner's understanding of the operation of the apparatus disclosed in Aldworth patent is in error. A declaration by co-inventor, Robert M. Hamilton, 'clarifying the operation of the Aldworth apparatus is enclosed.

Claims 1, 8, 9 and 23 were rejected on the grounds that (a) during the inhalation phase, when the inhalation valve 33 is open, the pressure of the gas supplied to the inlet/outlet port 13 of the Adlworth apparatus rises from a predetermined minimum to a predetermined maximum and (b) during the exhalation phase, when the exhalation valve 65 is open, the pressure in the inlet/outlet port falls from the predetermined maximum (apparently established during inhalation) to the predetermined minimum. The Aldworth apparatus is not designed to nor will it function in this manner. (Hamilton Decl. ¶¶'s 4-6). The statement in the Office Action that the exhalation valve 65 is closed during inhalation since the pressure in the outlet 13 won't be excessive while the pilot is

inhaling is not understood. The exhalation valve 65 of the Aldworth apparatus is closed during inhalation to prevent the pressurized oxygen from escaping to the cabin.

Method claims 1, 8 and 9 call for the step of operating the inhalation and exhalation valves while the pilot is experiencing excessive g-forces so that the pressure of the gas supplied to the inlet/outlet port rises from a predetermined minimum to a predetermined maximum during the inhalation phase and visa versa during the exhalation phase. These steps are simply missing from the operation of the Aldworth apparatus. (Hamilton Decl. ¶¶'s 4-6) Claims 1, 8 and 9 are patentable over Aldworth.

With respect to claim 12 the Office Action stated that a negative pressure in the inlet/outlet port 13 of Aldworth would trigger the demand valve 33 and establish a minimum pressure level in the port 13, i.e., the negative pressure required to open valve 33. The Office Action further opined that the inhalation valve would limit the maximum pressure in the mask, i.e., port 13, in response to the g-force. However, no explanation is given as to how this so called maximum pressure differs from the negative pressure required to open the valve 33. As pointed out by Mr. Hamilton, if the pressure in port 13 rises above the negative pressure, i.e., ΔP_1 required to open the inhalation valve 33, the valve will simply close, terminating the inhalation phase. While the pressure in control chamber 47 is responsive to the g-load, once established, that pressure dictates the no flow pressure. The pressure in port 13 does not vary between a minimum and a maximum level during inhalation or visa versa during exhalation in response to the g-force.

During inhalation and exhalation the pressure in port 13 will remain essentially steady, i.e., at the no flow pressure - ΔP_1 and $+\Delta P_2$, respectively. There is no apparatus or sub-system in

Aldworth which causes the pressure in the pilot's face mask to rise from a minimum (first) level to a maximum (second) level during inhalation and fall from the maximum level back to the minimum level during exhalation in response to the g-force. Claim 12 is patentable over Aldworth. It should be noted that applicant's apparatus employs two g-sensing elements in the preferred embodiment to accomplish the task called for in claim 12. There is no comparable structure in Aldworth.

The above comments distinguishing method and system claims 1 and 12 from the Aldworth reference are equally applicable to claims 3-5, 17 and 22 and these claims are clearly patentable over Aldworth.

The rejection of claims 10 and 11 as being unpatentable over the combination of Aldworth and Jaggars U.S. 4,219,039 is traversed for the same reasons set forth in the previous amendment. Jaggars does not disclose the steps or elements missing from Aldworth as previously discussed. Claims 10 and 11 are patentable.

Applicants appreciate the Examiner's statement that dependent claims 2, 6, 7, 13-16 and 18-21 calling for specific pressure ranges or value structure would be allowed if rewritten to include the limitations of the base and intervening claims. However, applicants have made a much more important contribution to the art than is reflected in such detailed claims. It is not believed that the Air Force would be interested in testing applicants' invention for possible use on a new aircraft if it did not involve a significant departure from the state of the art.

This application is now believed to be in condition for allowance and such action is courteously solicited. In the event that the Examiner is not persuaded by the above remarks, it is requested that the amendment and Mr. Hamilton's declaration be entered for purposes of appeal.

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Reply to Office Action of April 5, 2004

If applicants' attorney can be of any further assistance, please call the undersigned at the number provided.

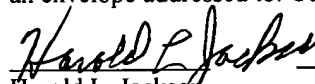
Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on April 29, 2004.

 April 29, 2004
Harold L. Jackson